

Appl. No. 10/706,065
Amendment G Dated October 14, 2008
Reply to Office Action of July 14, 2008

Docket No. 27600/X014A

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Amendments to the Claims:

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Previously Presented) Book production apparatus, comprising:
 - a gathering line operable during a single, continuous production sequence;
 - a demand printer operable during the single production sequence for producing first and second different printed pages in response to print commands issued during the production sequence, wherein the demand printer prints customized content on at least a portion of at least one of the pages without limitation as to position and orientation of the customized content over an entire surface of the at least one page
 - a feeding device operable to feed the printed pages to the gathering line; and
 - a controller that coordinates simultaneous issuance of the print commands to the demand printer and operation of the gathering line, the demand printer, and the feeding device during the single-production sequence to produce books.
2. (Original) The book production apparatus of claim 1, wherein the controller is coupled to a control interface that controls the demand printer.
3. (Original) The book production apparatus of claim 2, wherein the control interface is responsive to a template file having fixed and variable information.
4. (Original) The book production apparatus of claim 3, wherein the control interface includes a processing apparatus operable to separate the fixed and variable information into separate fixed and variable data streams.

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5. (Original) The book production apparatus of claim 4, wherein the separate fixed and variable data streams are provided to a collator/raster image processor together with a database and a press command file.

6. (Original) The book production apparatus of claim 1, wherein the feeding device includes a folder for folding the printed pages.

7. (Previously presented) The book production apparatus of claim 6, wherein the feeding device further includes a transfer apparatus that transfers the folded printed pages to the gathering line.

8. (Original) The book production apparatus of claim 1, wherein the feeding device comprises a packer box that receives the printed pages.

9. (Original) The book production apparatus of claim 8, wherein the packer box includes a transfer mechanism that transfers printed pages to the gathering line.

10. (Original) The book production apparatus of claim 9, wherein the feeding device further includes a folder for folding the printed pages.

11. (Original) The book production apparatus of claim 10, wherein the feeding device further includes a transfer apparatus that transfers the folded printed pages to the packer box.

12. (Previously Presented) The book production apparatus of claim 1, further including an additional demand printer that prints fulfillment pieces during the single production sequence wherein the fulfillment pieces are delivered to the gathering line.

13. (Original) The book production apparatus of claim 1, wherein the demand printer overprints on a preprinted web of paper.

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14. (Previously Presented) The book production apparatus of claim 1, further including at least one additional demand printer and feeding device and wherein the controller synchronizes the operation of the gathering line, all of the demand printers, and all of the feeding devices during the single production sequence to produce books.

15. (Original) The book production apparatus of claim 14, wherein different demand printers print different pages of the books.

16. (Original) The book production apparatus of claim 14, wherein different demand printers print different versions of the same page of the books.

17. (Original) The book production apparatus of claim 14, wherein each feeding device includes a folder for folding pages.

18. (Original) The book production apparatus of claim 17, wherein each feeding device includes a transfer apparatus that transfers the folded printed pages to the gathering line.

19. (Previously Presented) The book production apparatus of claim 17, wherein each feeding device further includes a packer box that receives the folded printed pages and transfers the folded printed pages to the gathering line.

20. (Original) The book production apparatus of claim 14, wherein each feeding device includes a transfer apparatus that transfers the folded printed pages to the gathering line.

21. (Previously Presented) The book production apparatus of claim 14, wherein each feeding device includes a packer box that receives the folded printed pages and transfers the folded printed pages to the gathering line.

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22. (Original) The book production apparatus of claim 14, wherein each different feeding device of the book production apparatus may include different components.

23. (Previously Presented) Book production apparatus, comprising:

a gathering line operable during a production sequence;

a demand printer for producing first and second different pages each having customized content that is disposed in an orientation at a position on a surface thereof, wherein the first and second pages are printed during a time interval during which the gathering line is continuously moving and wherein the demand printer includes means for printing the customized content on at least a portion of each page without limitation as to the orientation and position of the customized content over an entire surface of the page;

a feeding device operable to feed the customized pages to the gathering line; and

a controller that coordinates operation of the gathering line, the demand printer, and the feeding device during the production sequence to produce customized books.

24. (Original) The book production apparatus of claim 23, wherein the controller is coupled to a control interface that controls the demand printer.

25. (Original) The book production apparatus of claim 24, wherein the control interface is responsive to a template file having fixed and variable information.

26. (Original) The book production apparatus of claim 25, wherein the control interface includes a processing apparatus operable to separate the fixed and variable information into separate fixed and variable data streams.

27. (Original) The book production apparatus of claim 26, wherein the separate fixed and variable data streams are provided to a collator/raster image processor together with a database and a press command file.

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28. (Original) The book production apparatus of claim 23, wherein the feeding device includes a folder for folding the customized pages.

29. (Original) The book production apparatus of claim 28, wherein the feeding device further includes a transfer apparatus that transfers the folded customized page to the gathering line.

30. (Original) The book production apparatus of claim 23, wherein the feeding device comprises a packer box that receives the customized pages.

31. (Original) The book production apparatus of claim 30, wherein the packer box includes a transfer mechanism that transfers customized pages to the gathering line.

32. (Original) The book production apparatus of claim 31, wherein the feeding device further includes a folder for folding the customized pages.

33. (Original) The book production apparatus of claim 32, wherein the feeding device further includes a transfer apparatus that transfers the folded customized page to the packer box.

34. (Original) The book production apparatus of claim 33, further including an additional demand printer that prints fulfillment pieces during the production sequence wherein the fulfillment pieces are delivered to the gathering line.

35. (Original) The book production apparatus of claim 23, wherein the demand printer overprints on a preprinted web of paper.

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36. (Previously Presented) A method of producing books, the method comprising the steps of:
supplying a gathering line, a demand printer for producing first and second pages at least one of which has customized content printed on at least a portion thereof without limitation as to position and orientation of the customized content over an entire surface of the at least one page in response to print commands generated during a continuous production sequence, and a feeding device; and
coordinating simultaneous operation of the gathering line, the demand printer, and the feeding device during a production sequence to produce the books.

37. (Original) The method of claim 36, wherein the step of coordinating includes the step of operating a controller coupled to the gathering line, the demand printers, and the feeding devices.

38. (Original) The method of claim 37, wherein each demand printer is responsive to a printer control unit and the step of operating includes the step of transmitting commands to the printer control units.

39. (Original) The method of claim 38, wherein each printer control unit includes a processing apparatus and further includes the step of separating master and variable data streams in the processing apparatus.

40. (Original) The method of claim 39, wherein each printer control unit further includes a collator/raster image processor and includes the further step of providing the master and variable data streams, a database, and a press command file to the collator/raster image processor.

41. (Original) The method of claim 36, further including the step of folding pages printed by the demand printers prior to delivery of the pages to the gathering line.

42. (Original) The method of claim 36, wherein each feeding device includes a packer box and wherein the step of coordinating includes the step of operating the packer box in synchronism with the gathering line.

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43. (Previously Presented) The book production apparatus of claim 23, further including at least one additional demand printer and at least one additional feeding device and wherein the controller synchronizes the operation of the gathering line, all of the demand printers, and all of the feeding devices during the production sequence to produce books.

44. (Previously Presented) The book production apparatus of claim 43, wherein different demand printers print different pages of the books.

45. (Previously Presented) The book production apparatus of claim 43, wherein different demand printers print different versions of the same page of the books.

46. (Previously Presented) The book production apparatus of claim 43, wherein each feeding device includes a folder for folding pages.

47. (Previously Presented) The book production apparatus of claim 46, wherein each feeding device includes a transfer apparatus that transfers the folded printed pages to the gathering line.

48. (Previously Presented) The book production apparatus of claim 46, wherein each feeding device further includes a packer box that receives the folded printed pages and transfers the folded printed pages to the gathering line.

49. (Previously Presented) The method of claim 36, further including the step of providing at least one additional demand printer and at least one additional feeding device and wherein the controller synchronizes the operation of the gathering line, all of the demand printers, and all of the feeding devices during the continuous production sequence to produce books.

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50. (Previously Presented) The method of claim 49, wherein different demand printers print different pages of the books.

51. (Previously Presented) The method of claim 49, wherein different demand printers print different versions of the same page of the books.

52. (Previously Presented) The method of claim 49, wherein each feeding device includes a folder for folding pages.

53. (Previously Presented) The method of claim 52, wherein each feeding device further includes a transfer apparatus that transfers the folded printed pages to the gathering line.

54. (Previously Presented) The method of claim 52, wherein each feeding device further includes a packer box that receives the folded printed pages and transfers the folded printed pages to the gathering line.

55. (Previously Presented) The book production apparatus of claim 1, wherein the controller also coordinates timing of the demand printer.

56. (Withdrawn) An apparatus for book production, the apparatus comprising:
a gathering line;
a feeding device for feeding printed signatures to the gathering line;
a demand print system for printing and supplying to the feeding device consecutive first and second printed signatures, wherein the amount of time required to print the first signature is substantially different than the amount of time required to print the second signature; and
a controller for coordinating the operation of the gathering line, the feeding device, and the demand printer to produce books.

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57. (Withdrawn) The apparatus of claim 56, wherein the demand print system comprises a demand printer.

58. (Withdrawn) The apparatus of claim 56, wherein the apparatus comprises a RIP and a reusable object cache.

59. (Withdrawn) The apparatus of claim 58, wherein a reusable component of a book is processed by the RIP and stored in the reusable object cache.

60. (Withdrawn) The apparatus of claim 58, wherein the RIP processes fixed and variable data streams.

61. (Withdrawn) The apparatus of claim 56, wherein the demand print system prints pages and the feeding device comprises a folder for folding the pages into signatures.

62. (Withdrawn) An apparatus for book production, the apparatus comprising:
a gathering line;
a feeding device for feeding printed signatures to the gathering line;
first and second demand printers for printing and supplying first and second signatures, respectively, to the feeding device; and
a controller for coordinating the operation of the gathering line, the feeding device, and the first and second demand printers to produce books

63. (Withdrawn) The apparatus of claim 62, first and second demand printers print on wherein the first and second demand printers print different signatures of the books.

64. (Withdrawn) The apparatus of claim 62, wherein the first and second demand printers print different versions of the same signature of the books.

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65. (Withdrawn) The apparatus of claim 62, wherein the book production apparatus further includes a variable print engine that generates data for the demand printer.

66. (Withdrawn) The apparatus of claim 65, wherein the variable print engine is responsive to a template file having fixed and variable information.

67. (Withdrawn) The book production apparatus of claim 65, wherein the variable print engine separates the fixed and variable information into separate fixed and variable data streams.

68. (Withdrawn) The book production apparatus of claim 67, wherein the apparatus further comprises a RIP and a reusable object cache, wherein the RIP rasterizes the fixed data stream and stores the results in the reusable object cache.